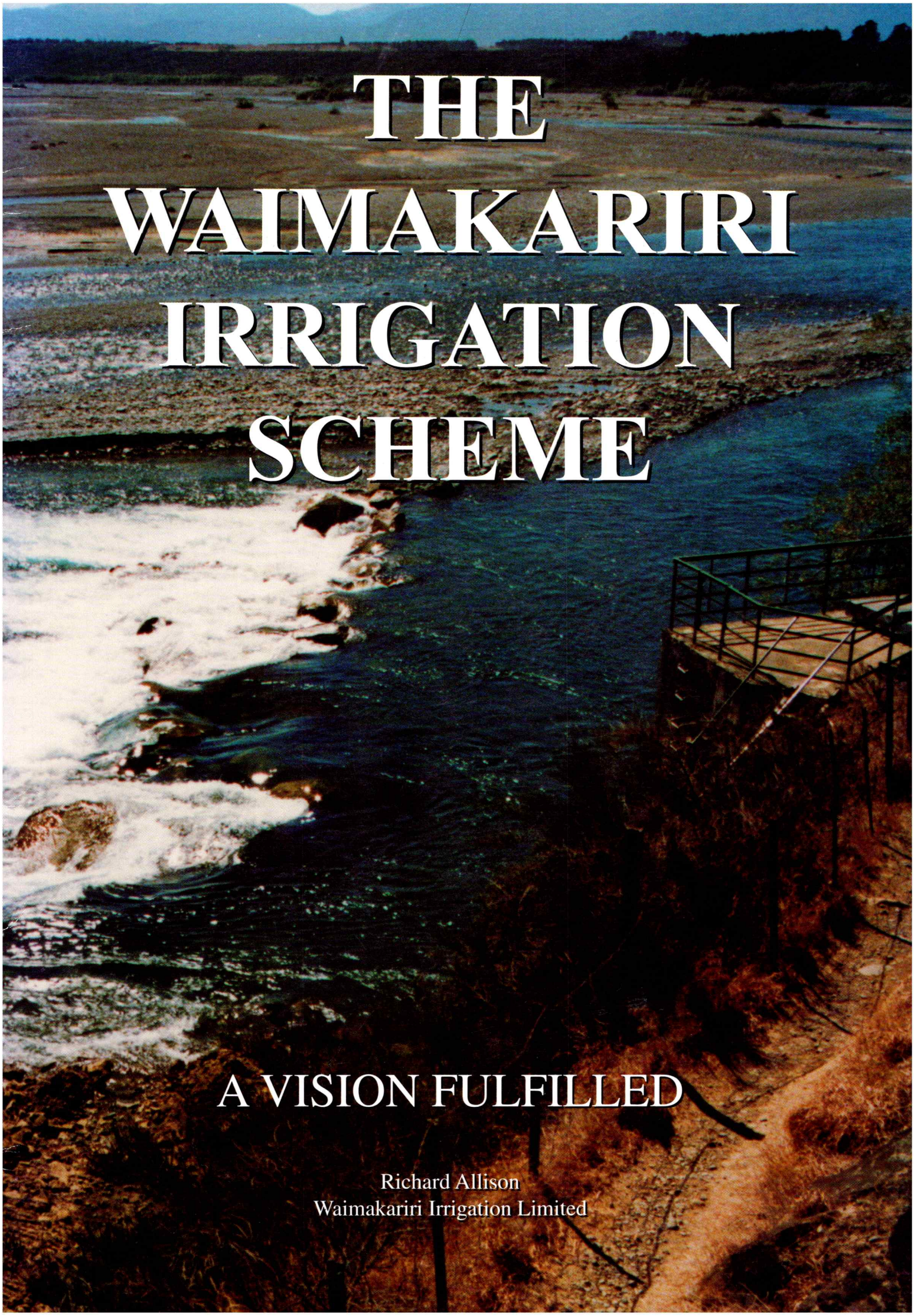

THE WAIMAKARIRI IRRIGATION SCHEME

A VISION FULFILLED

Richard Allison
Waimakariri Irrigation Limited

WAIMAKARIRI WATER RACES

FOREWORD

The opening of the Waimakariri Irrigation Scheme on the 30th of October 1999 is a sequel or rebirth of the water race system. This water race transformed the Waimakariri-Ashley Plains when opened by the Prime Minister Richard Seddon on Monday, 16 November, 1896.

The Irrigation Scheme is a tribute to all the people, their initiatives and energy who created managed and maintained the 800 kms of water races covering 40,000 hectares over the last 104 years. Continued sound management of the races should see the water flowing gently over the Plains for as long as people live here. What people in the future choose to use the water for may be quite different than what we see today.

THE PLANNING OF THE WATER RACE

The first attempts to bring water to the higher plains between the Waimakariri River and Oxford were by farmers who built a dam and water races in the upper Eyre River, west of View Hill. While the benefits of water to such a summer-dry area were dramatic, the limited size of the catchment resulted in poor water reliability. There were also constant complaints about keeping the races clean and in 1892 the Roads Board took control. It was known as the Eyre Scheme and was replaced by pipes in the 1970's. It is now known as the No 1 Piped Scheme. The No 2 Piped Scheme was formed in the 1980's from Coopers Creek. These problems inspired the idea of harnessing the silty waters of the Waimakariri River.

In early 1892, after discussions by the local Roads Board concerning recent droughts and the need for an improved water scheme, elections were held to form the Waimakariri-Ashley Water Supply Board. The members of this first Board were John Dobson (Chairman), Arthur Templer (Secretary), Thomas Pashby, Edmund Wilder, John Smith and Edward Chapman. On June 8 1892, Board members went on a two day inspection of potential water intakes. They inspected the Ashley Gorge and then moved across country to the Waimakariri River at Rockford, 6.5 kms above the Gorge Bridge.

Most were immediately convinced that Rockford was the ideal place for an intake even though it required a long tunnel. They were met by Marmaduke Dixon (and his son, Marmaduke John Dixon) who promoted the merits of a cheaper intake at Browns Rock, 3.3 kms below the Gorge Bridge.

THE DIXON PRIVATE SCHEME

At this stage Marmaduke had been farming at Eyrewell for 40 years and had only the year before put in his own substantial water scheme. This scheme is best described by a letter he wrote for the English mail

"I am now going on with a small scheme on my own property quite independent of anyone else. It covers about 4000 acres. This is now well in hand and about a fortnight will see the water on the land. We have been at it for about 4 or 5 weeks. We have shifted about 6000 yards of slough (outer covering or overburden)and got about 300 acres of land ploughed, and hope by New Year (1892) to have well up to 1000 acres under turnips and green crops. It will not cost me 100 pounds, being my own contractor and engineer."

The effect on the land was astonishing, as a hundred farmers and other interested persons found when they attended a field day arranged by the Dixons shortly before Christmas in 1891.

EXTRACTS FROM THE OXFORD AND CUST OBSERVER

The following covers the first meeting of the Waimakariri-Ashley Water Supply Board . A large part of the meeting was spent discussing a letter from Dixon in which he offered to engineer and construct a race. It is preceded by an article describing his success at harnessing the Waimakariri River for irrigating his own property .

OXFORD AND CUST OBSERVER SATURDAY, MAY 21, 1892.

WAIMAKARIRI-ASHLEY WATER SUPPLY BOARD

The first meeting of the Waimakariri-Ashley Water Supply Board was held at the Road Board Office, Rangiora, yesterday afternoon. There were present - Messrs J. Dobson, T. Pashby, E. Chapman, E. Wilder and J. Smith.

Mr Pashby referred to the active interest Mr J. Dobson had taken in the initiation of the proposed irrigation scheme for the water supply district under the control of the Board, and moved that he should be elected Chairman of the Board.

Mr E. Chapman seconded the motion, and fully endorsed the remarks made respecting the valuable work done by Mr Dobson.

The motion was carried.

Mr Dobson expressed his thanks to the members for electing him Chairman of so important a Board. He looked upon the work to be carried out as the most important that had ever been instituted in the Colony. Irrigation was making great strides all over the world: and he had had practical experience of its benefit. He was extremely obliged to the late Irrigation Committee for the cordial manner in which it had worked with him, and he trusted the same good feeling would exist among the members of the new Board. For the benefit of the new members he gave an outline of the preliminary work done in the matter of surveys in connection with the water supply scheme.

A letter was read from Mr M. Dixon, stating that he was prepared to enter into an agreement with the Board to deliver a bulk or stream of water 25ft wide by 2ft deep, running two miles an hour, at a point on the highest terrace three miles from the intake from the Waimakariri at Brown's Rock, for distribution on the plains the largest bulk to be delivered at a point six miles from the intake, the work to be in a forward state by July, 1892, in time to be utilised during the forthcoming irrigation season. He would agree to guarantee (being allowed in the meantime the use of the available water) to the extent of paying interest on the money expended under the contract, for the sum of £4000, for which he was prepared to make a large rock cutting, or a tunnel 20ft wide tapping the river four feet below the ordinary level to make substantial head works, and to deliver the water on to the Eyre about half a mile from the Warren station to permit of its being distributed over the plains. He was also prepared to convey to the Board in trust for public use, and for a water-supply channel, a strip of land four chains wide for a distance of about four miles where the land belonged to him; also to fence and plant same.

The Chairman doubted whether Mr Dixon's proposal could be discussed at present, but he would point out that there was no assurance as to the permanence of the supply of water near Brown's rock. The only place where a constant supply could be depended upon was at the Rock ford.

Mr Chapman thought the matter should stand over for the present.

Mr Pashby considered they were not in a position to discuss the letter or give any

opinion upon it. They would require an engineer's report to guide them.

It was eventually resolved to allow the letter to stand over until a future meeting.

A letter was read from the Mandeville and Rangiora Road Board, acknowledging receipt of application of £20 11s 11d for preliminary work in connection with the Waimakariri-Ashley water supply, and stating that the following resolution had been passed by the Board – "That the Board consider they have already contributed quite sufficient towards the preliminary expenses of the Waimakariri-Ashley water supply, but they are willing to advance the amount of the claim until such time as the Water Supply Board has funds to refund it."

The Chairman pointed out that all the Boards in the parts of the County interested had entered into an agreement to share the preliminary costs in connection with the scheme.

In reply to a question, the Secretary stated that the Board had previously contributed between £15 and £16 of the expenses.

It was decided to see the Board about the matter.

The appointment of a Secretary and an Engineer was next considered.

Mr Chapman thought applicants for the position of Secretary should be given to understand that the office would not be a permanent one, as other arrangements would be necessary when the scheme was in working order.

After some discussion it was agreed to invite applications for the position, the remuneration to be £50 per year.

It was also decided to invite applications for the position of Engineer for three years, at a salary of £350 per annum.

It was left with the Chairman to engage a room for meeting purposes.

The Bank of New Zealand was appointed the bank of the Board.

It was decided to meet every Tuesday, at 10 a.m., and a common seal was decided on.

A vote of thanks was passed to Mr R. Wright for acting as Secretary during the meeting.

The Board then went into Committee to draw up specifications of the Engineer's and Secretary's duties.

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CORRESPONDENCE

While our columns are open to all we do not identify ourselves with any opinions expressed therein.

WAIMAKARIRI IRRIGATION SCHEME

To the Editor of the "Observer"

Dear Sir, – Mr Dixon has made public statement that the minister of Lands has promised him that during the next sitting of Parliament he will introduce a Bill to give Mr Dixon power to make Water Races for the Irrigation of Land, now under offer to him by the Midland Railway Co. This land lies along the bank of the Waimakariri from Burnt Hill to Eyreton, and the Eyreton district and consists of 40,000 acres. If this is done it will in a great measure cripple the present scheme, because the water to serve the lower freeholders will have to be carried through this land which extends about twenty miles on the direction of the main flow of the races and we should have the anomaly of Irrigation channels crossing each other and in fact having a regular mixture.

It has been pointed out to the Minister of Lands that a large portion of this land is fit for settlement, as it consists of good patches which could be cut up into homesteads and a good size piece of the lightest could be given to each homestead on which sheep could be wintered to great advantage, and with irrigation, it is certain, could be improved to a very great extent year by year. This would at once provide profitable employment to a large number of settlers who took up this land, instead of their being driven to seek land in the North Island, as is the case at present time. Is the Government sincere in its desire of putting the Working Man on the land? If it is so, is this the way to deal with the public estate? to give it into the hand of a speculator, to pass an act to give him the power and opportunity to make a large fortune in a few years. The speculator may say he will give the land for what it has cost him and after charging expenses, and all he wants is to benefit the recipient of the lands. *Sic notus Ulixes?* Has not the government in every way tried to obstruct this scheme? First by retarding the passing of the act, second by delaying the proclamation of the district, and thirdly by now threatening to crush it with an act to over-ride the scheme and leave us at the mercy of well your readers know the man. A liberal government does not appease its opponents but crushes them.

Yours &c.

SPES.

OXFORD AND CUST OBSERVER SATURDAY, MAY 28, 1892.

WAIMAKARIRI IRRIGATION SCHEME

To the Editor of the "Observer."

Sir, – Your correspondent "Spes' under its true name deserved prosecuting for slander either for myself or for the Minister of Lands, but he she or it is ashamed of its name; I will content myself at present by stating that, Mr Dixon has not made the statement, that the Minister of Lands had promised him that he will introduce a bill to give Mr Dixon power to make water races &c. I have had no correspondence or conversation with the Minister of Lands on the subject. In a tete-a-tete conversation with the Minister of Public Works in a railway carriage, when the question of Irrigation was raised otherwise than by myself, I explained to him the position I was in, and my objects and intentions, which were to make this large area of worthless country, of which I held the control, into useful and continually improving though low-priced land; by means of a cheap system of Irrigation, for which is possessed very remarkable facilities and advantage, and that I was bent on cutting up a large portion of the block into small 1000 acre runs, and in some cases where the land was somewhat better, into suitable farms. The Hon. Mr Seddon spoke in a kind, encouraging way, and stated that he was greatly interested in irrigation, and that perhaps he was as well up with the question of Water Races, as any man in New Zealand, and that had he not been leaving for the north

the next day, it would have given him great pleasure to have come up and seen the very good work which he understood had been done. He asked me in as may words, if I wished to obtain private water right in the water that would serve the land. I explained to him that according to the good Gommunistic Roman Law both the right to the water, and the right to the management of that water, went with the land, and that in New Zealand as there was plenty of water, and as it created a value in the land it should be inseparable from the land. In several of the countries of Europe, that Law was well established, and it was delightful to find that when both North and South America were discovered, the exact same principals of Law had been carried out for hundreds of years, where otherwise nothing would have grown. The Oxford people might like to know that this Peublo System had made these Indians the grandest fruit and flower growing people that the world ever saw, and, that this system is driving Colorado to the front of all the world, at the present time, where as in California, where the English Common or Riparian Law had gained the ascendant, the country with its enormous capital invested in irrigation was making no progress, but rather the reverse. The Minister said, I am very pleased to hear you express yourself in that way, and I agree with every thing you say. I explained to him that the various difficulties I had to contend myself with were almost insuperable, but that I was a queer kind of fellow, and that I had been in the habit of getting over difficulties all my life, and as there was such a delightful prospect beyond, I would surely get over these difficulties too. I went as far as to say, that, failing any other means, I might ask the Minister of Public Works to use the power placed in his hands by the Public Works Act. He stated that no doubt they would do their duty when called upon. The Minister was both encouraging and courteous, and that is not what I have been in the habit of receiving in the quarter where I had at least a right to expect allies and co-operators. I may have stated that if I got my way, I could put settlers on the land on more favourable terms than the Government can offer.

I am satisfied the District can be supplied in a better and cheaper manner from Browns Rock than it can be so supplied from any other place. The south Eyre district can be supplied from there. I am content the board giving me the facilities, so supply myself from that point. I should be pleased to find myself working with a thoroughly practical board, sitting at a place central to their work, educating themselves and the country in good and economical management. To enable me to make this poor land to give a return for the capital employed, to live myself, and to allow others to live, the readiest and best available means have to be used; and how can I expect to have credit to get what capital I require, unless the speculation is a good one, which I am convinced it is. A comparatively small profit extending over the large area will give me all that I require, but the difficulties are very great in initiating a large scheme like this, and our inexperience has to be thrown into the scale. In my first interview with Edward Dobson Esq. he pointed out how the Oxford district could be supplied without going to the Waimakariri at all. Are not the gleanings of the well reaped Ashley cornfields better than the gatherings of manuka stick?

Yours &c,

MARMADUKE DIXON.

One common element in nearly every article on the proposed schemes was the energy and persuasion of Marmaduke Dixon in his quest to establish the intake at Browns Rock and not above the Gorge Bridge at Rockford, as others had preferred.

The letter to the Editor (see following) questions the Dixon scheme as it jeopardized plans for the intake at Rockford. A Rockford intake would bring water from the Waimakariri Gorge to Oxford, while a Browns Rock intake would deliver water only to the east of Burnt Hill. The following week saw a reply from Dixon explaining his position and detailing his discussions with the Premier, Richard Seddon.

Dixon attracted a lot of negative sentiment and there appeared to be philosophical disagreements, between Dobson (the Chairman) and Dixon, dating back to at least 1889, over more than just this intake and water issue. Both wanted a successful water scheme for the County, but while such tensions in the community existed no scheme was being initiated.

There was intense interest and debate on the water scheme from the late 1880's until after the opening in 1896. Dobson believed that this scheme was the most important undertaken in the colony up to that time. This was reflected in the Board obtaining its own Act of Parliament, which stemmed from the following letter from Dobson to the Premier.

Copy

Belshaugher
Rangiora 31/3/91

The Hon
The Premier
New Zealand
Wellington

Sir,

I have the honour to lay the following matters before you with reference to taking water from the river Waimakariri for water-race purposes

As you are aware the Counties Act is not in force within the Ashley County and at a meeting of the County Council about a fortnight ago it was decided not to bring the Act into force

Five of the Road Boards in the County, the districts of which lie between the Waimakariri and the Ashley rivers, have appointed one person from each Board to form a Water-Race Committee with the object as above stated of taking water from the Waimakariri. Levels and have been taken and estimates made for constructing the races

It is estimated that about one hundred and sixty thousand acres of land will be watered including all the Crown lands between the Waimakariri and the Ashley river

of the Oxford and Sheffield Railway and the estimated Cost to £20.000

The Water-Race district has been laid off and every thing ready for Carrying out of the work, but the Committee has no Locus Standi it not being a Governing Body within the meaning of Sections 141, 142 & 143 of the Road Boards Act 1882

I have, therefore, the honour to ask whether you would be prepared to insert a Clause in the Road Boards act Constituting the present Water-Race Committee into a Water-Race Board with power to Carry out the Road Boards act as regards Water Races, or pass a short act Constituting the said Board.

I has the ~~pleasure~~ honour of accompanying you on your visit of inspection to the Eyre Water-Race in 1885 on the completion of that work which has been of inestimable benefit to the settlers of that portion of the Oxford Road District

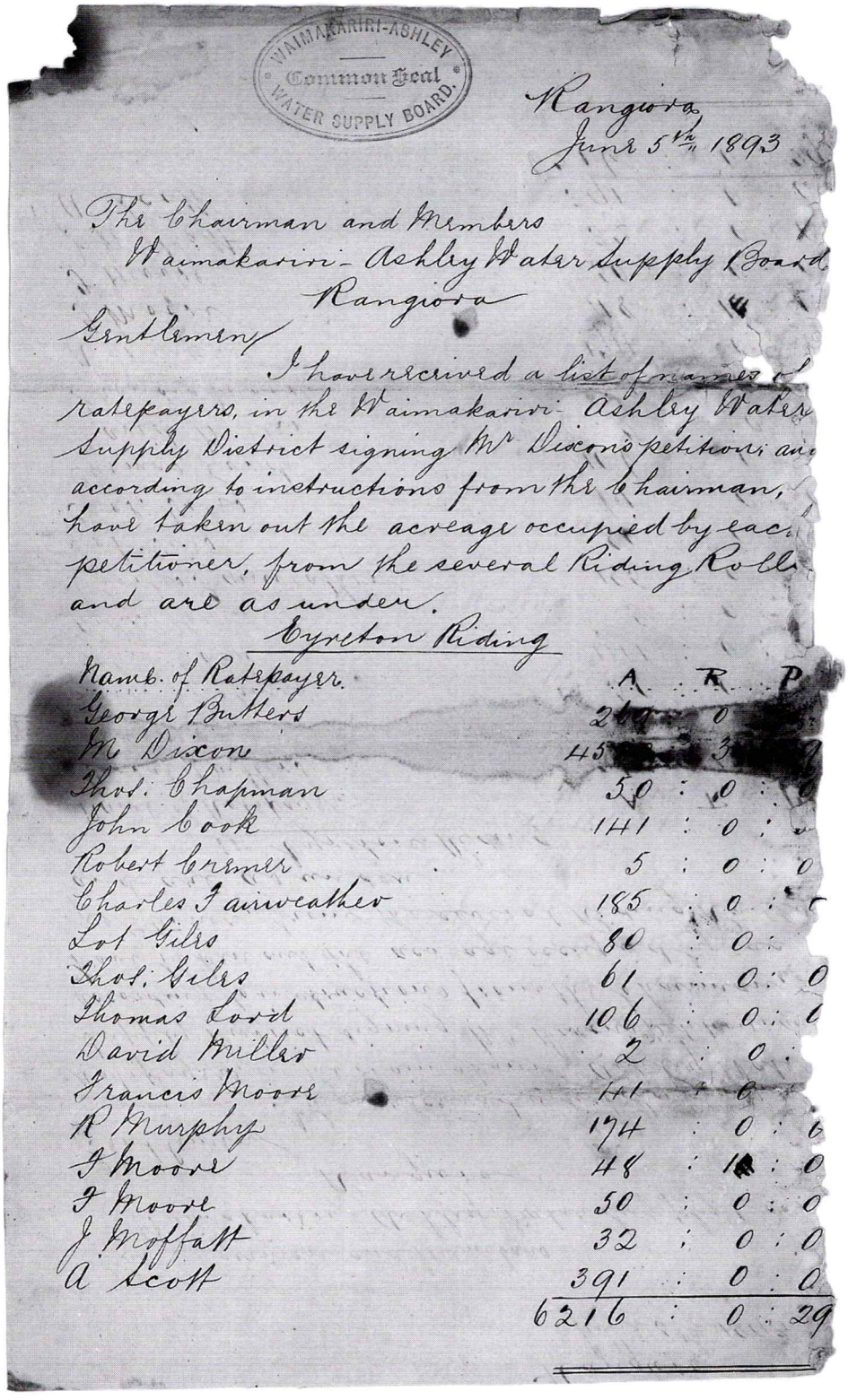
I have conferred with J.B. Lance Esq. about powers being given to the Committee and he is of opinion that there would be no difficulty among that the free Boards are in favour of the work being done

Trusting you will be able to see your way to help us in the direction I have suggested

I have the honour to be, Sir,
Your most obt Servant
John Dobson
Chairman
Water-Race Committee

The debate between Rockford and Browns Rock targeted two concerns; the difference in price with the larger tunnel at Rockford costing 31 000 pounds, as compared to Browns Rock at only 10 000 pounds. The second issue being the lower reliability of supply at Browns Rock because the river had been known to meander away from this point.

In the 1892 and 1893 seasons heavier than usual rainfall over the summer led ratepayers to prefer the cheaper scheme. The following is a list of petitioners who supported Browns Rock and the area of land they owned.


WAIMAKARIRI-ASHLEY
Common Seal
WATER SUPPLY BOARD.

Rangiora
June 5th 1893

The Chairman and Members
Waimakariri-Ashley Water Supply Board
Rangiora

Gentlemen

I have received a list of names of ratepayers, in the Waimakariri-Ashley Water Supply District signing Mr Dicon's petition; and according to instructions from the Chairman, have taken out the acreage occupied by each petitioner, from the several Riding Rolls and are as under.

Eyreton Riding

Name of Ratepayer.	A.	R.	P.
George Butters	219	0	
M Dixon	45	3	
Thos. Chapman	50	0	
John Cook	141	0	
Robert Cremer	5	0	0
Charles Fairweather	185	0	
Lot Giles	80	0	
Thos. Giles	61	0	0
Thomas Lord	106	0	
David Miller	2	0	
Francis Moore	141	0	
R Murphy	174	0	
J Moore	48	1	0
J Moore	50	0	0
J Moffatt	32	0	0
A Scott	391	0	0
	6216	0	29

West Cypretow Riding

Name of Ratepayer	A	R	P
W. Bailey	320	0	0
M. Dixon	17649	0	18
Thomas Morris	123	0	0
R. J. Reid	117	3	39
	18210	0	7

East Riding

Wolff R. J.	190	0	0

Oxford Riding

H. Lohrmann	674	3	26
R. J. Reid	161	0	22
	836	0	

	A	R	P
Making a Grand total of	25452	1	14

I am Gentlemen
Your Obedient Servant
Arthur Templer
Secretary

The following record was made just thirteen days before the whole Board was voted out due to public frustration on 30th April 1894.

WAIMAKIRI-ASHLEY WATER SUPPLY BOARD

The following Statement was made at the Board Meeting at Rangiora on April 17th, 1894, by Mr. John Dobson, Chairman.

IN accordance with the provisions of "The Water Supply Act, 1891," a general election of members of the Board will be held on the 30th April inst., and it is desirable that the attention of the ratepayers should be directed to the manner of election and to the nature and extent of the work of the present Board during its term of office.

Election of Board.

"The Water Supply Act" came into force on the 1st day of October, 1891, and Part II of this Act provides that within any County wherein "The Counties Act, 1886, is not in operation, or is suspended, any two or more Road Boards, representing road districts which adjoin each other, may amalgamate, and by proclamation gazetted by the Governor, be declared a Water Supply district. In November, 1891, the Committee received resolutions from the Road Boards interested, together with a description of the lands in each Road District or Riding that would be benefitted by a water supply, and in the exercise of such power conferred by the Act the Waimakariri-Ashley District was proclaimed on the 13th day of February, 1892, and the present Board elected by the ratepayers of the Riding which they represent in May 13th, 1892.

Rock Ford Scheme.

The boundaries of the District were made to include all lands that could be served from a point of intake on the River Waimakariri, known as the Rock Ford, and the Board upon coming into office found that this scheme had been reported upon by Mr. Sharp, surveyor to the Committee, and estimated at £26,782, for a supply of 840 gals. per acre per day; that full particulars of the intake and supply had, after discussion, been adopted at meetings of ratepayers held at the several Road Board offices in the District, in June, 1891, and that an alternate scheme for a smaller supply from the same intake had been rejected; also that the Rock Ford was the lowest point of intake on the River Waimakariri capable of serving the upper portion of the proclaimed District. A petition was received by the Board on the fifth of July, 1892, from sixteen ratepayers and holders in the Eyreton District asking to have an alternate scheme surveyed and estimated from the Gorge Bridge as a point of intake.

The Engineer reported on the 13th September, 1892:—

Rock Ford—acreage watered, 153,568; supply gals. per day, 128,992,920; cost, £30,878.

Gorge Bridge—acreage watered, 139,088; supply gals. per day, 116,833,920; cost, £24,186.

The estimates were calculated to supply the same quantity of water as provided for in Mr. Sharp's report, adopted by the ratepayers in June, 1891, viz., 140 gals. per day, or 1 cubic foot per second per square mile.

The Board unanimously decided to adopt the Rock Ford scheme, and forwarded the report and estimates to Mr. E. Dobson, C.E., Consulting Engineer, for his opinion as to the sufficiency of the estimates to carry out the work, also as to grades, side slopes, and other engineering matter. Mr. E. Dobson reported approving the scheme, and considered that the sum of £30,000 should be sufficient for the execution of the works.

The Board then resolved to raise a loan of £31,000, and in order to comply with the provisions of the Act, meetings of ratepayers were held in each Riding of the District to discuss the proposal. At each of the meetings so held the proposal was sanctioned by large majorities of those present. At the poll taken on February 27th, 1893, the proposal was carried, and gazetted on the 6th day of March, 1893.

Special meetings of ratepayers were held throughout the District in August, 1893, for the purpose of explaining the proceedings of the Board, the result being that only seventy-six ratepayers out of a total of six hundred and twelve voted against the scheme being proceeded with, representing £110,655 out of a total of £786,357.

Opposition to Scheme.

A large amount of discussion has taken place in the Districts as to the merits and demerits of the scheme, it would appear from the newspapers and reports that in 1890 and 1891 the ratepayers were unanimous and anxious for water, and could not have too much. Why? Because the years 1890 and 1891 were very dry seasons. Taking the years 1892 and 1893, the rainfall has been very heavy, and consequent upon this some of the ratepayers have forgotten their troubles with regard to the scarcity of water, but upon a perusal of the rainfall in Canterbury from 1864 to 1892 it will be found that the minimum annual rainfall during that period was 13.54 inches, the maximum annual rainfall during that period was 35.287 inches, and the mean of the whole period 25.108 inches. Therefore what has occurred several times in the past twenty-eight years may occur again, viz., want of water in various portions of the District, causing expense, trouble, and inconvenience to the settlers.

A scheme that has a permanent supply at such levels as to give the greatest benefit to the largest number of ratepayers at a remunerative cost per acre, is the best for the district, and it cannot be disputed that the Rock Ford intake fulfills these conditions, as the following figures will show:—

SELWYN COUNTY WATER RACE SYSTEM.

	Acreage.	Supply in Gals. per Diem.	Cost.
(1)	326,000	70,940,960	£67,679

ASHBURTON COUNTY WATER RACE SYSTEM.

	Acreage.	Supply in Gals. per Diem.	Cost.
(2)	450,000	64,800,000	£25,000

ASHBURTON COUNTY.

Mr. Baxter, C.E., proposed irrigation scheme from Lavington.

	Acreage.	Supply in Gals. per Diem.	Estimated Cost.
(3)	150,000	151,200,000	£60,000

WAIMAKARIRI-ASHLEY DISTRICT—ROCK FORD.

	Acreage.	Supply in Gals. per Diem.	Estimated Cost.
(4)	153,563	128,992,920	£30,878

The Selwyn County Water Race system was commenced in 1875, a sum of £25,000 having been allocated by the late Provincial Government of Canterbury to be spent in a water supply for the lands between the Waimakariri and Selwyn Rivers, known as the Malvern District. consequently it is impossible to make a comparison as to the annual water charges between this District and the Selwyn County. Further,

1st. The supply does not average more than one-fourth of the Rock Ford supply.

2nd. The settlers have to make and maintain their own branch races; the County maintaining their head works and main races.

The Ashburton County Water Race system was constructed from the County Funds, the settlers paying a mileage rate for cleaning the races.

The Eyre Water Race in the Oxford District was constructed from Government Funds, to improve Government land for sale, the charge in this case being for maintenance only.

No reliable comparison of annual charges can be made unless the works are executed under similar conditions, viz., by Loans raised to execute the works. Then the annual charges must be made to cover:—

Interest and Sinking Fund on Loans.

Maintenance charges and supervision.

It is interesting to see that no mention is made of Browns Rock as a potential intake, while the new Board immediately borrowed 10 000 pounds and set to work there. By November 1896, the intake and 76 metre tunnel blasted from the rock were completed and the main race took water to the Eyre River crossing 17 kms away.

The members of the Waimakariri Ashley Water Supply Board that oversaw the construction are listed on the marble plaque at the Browns Rock Intake. They are : J. O' Halloran (chairman) J. D. Dickinson, S. Horrell, M. Dixon, J. McDowell, C. J. Webster (Engineer) J. W. Jones (Contractor).

THE OPENING 16th November 1896

The opening was a gala day for the District. A special train from Christchurch gathering passengers en-route via Rangiora and Oxford and then on to the Gorge from whence they walked downriver to Browns Rock. The official party was ferried by wheeled transport from Oxford and, following a grand banquet in a marquee, there were many speeches and tributes.

Marmaduke Dixon did not live to see the official opening; having died in 1895. A warm tribute was paid to his pioneering work by the Prime Minister, Richard John Seddon. The opening by "King Dick" reflected the importance of the scheme to the country last century and following the opening of the Waimakariri Irrigation Scheme it is to be hoped it will again recapture its place of importance in the community.

THE OXFORD OBSERVER SATURDAY, NOVEMBER 21, 1896.

WAIMAKARIRI-ASHLEY WATER SUPPLY BOARD

FORMAL OPENING BY THE PREMIER

The long-looked forward to event in the northern district, the opening of the Waimakariri-Ashley water Supply race, took place on Monday last, the principal in the ceremony being the Hon. R. J. Seddon. A special excursion train, to which was attached a carriage for the Premier, Mrs Seddon, and party, left Christchurch at 8.5 a.m. and passing through Rangiora picked up a number of passengers at different stations, most of whom were specially interested in the water-supply works. The number of excursionists was not so large as was expected, the unpromising look of the weather and the bleak wind blowing being a deterrent to a visit to the unsheltered banks of the Waimakariri. At Oxford the Premier and party, which included Mr D. Buddo, M. H. R. was met by Mr J. O'Halloran (chairman) and the members of the Water-Supply Board, with the Engineer, Mr G. Johnston Webster. Brown's Rock being nine miles from Oxford vehicles were provided for some of the party, whilst for the benefit of others the train ran on to near the Gorge Bridge, from which a walk of between two or three miles had to be taken to the Rock where the head works are situated.

With regard to the Waimakariri-Ashley system, the nature, scope and progress of the works have so often been referred to that it is not now necessary to give any lengthened description of them. It is just over six years since the idea of watering the plains between the Ashley and Waimakariri rivers first became a matter of public importance. It was first referred to the Road Boards, and as an outcome, the Waimakariri-Ashley Water-Supply was formed and a Board was elected on May 1, 1892. Mr John Dobson, who took a prominent part in furthering the proposals, was elected amongst the members and was appointed the first Chairman. This Board decided upon a scheme to take water from a point in the river known as Rock Ford, at a cost of about £31,000. Just about that time, however, two wet seasons set in, or rather the rainfall was much heavier during the dry season of the year, and some of the ratepayers began to think that a much cheaper scheme would be preferable. In 1894 a new Board was returned, practically pledged to adopt a less expensive scheme, Mr John O'Halloran was elected Chairman, and has all through filled the office most capable and energetically. The cheaper scheme adopted by the Board was that known as Browns Rock supply, which had been most energetically supported by the late Marmaduke Dixon, in opposition of the Rock Ford Scheme. Ten thousand pounds were borrowed for the work and a commencement was made on it over eighteen months ago. It was expected the water would be turned on about the beginning of the present year, but difficulties with some of the contractors delayed the work very seriously. The whole of the main race to the river Eyre is now, however complete, and it only remains for the contributing races to be made across the country in the direction of the head works, all of a most substantial character, include a tunnel through the solid rock 8ft wide at the bottom, 18ft. 10in. in height and 24ft. in length. The main race to the Eyre River eleven miles in length. For two miles the race is constructed along the edge of the river bank terrace, the waterway being 5ft. in depth, 9ft. 6in. wide at the top and 7ft. at the bottom. From the top of the terrace the dimensions of the waterway are gradually altered to 20ft. in width and 2ft. in depth. The size is maintained to the first distributing race, which is to run in the direction of East Eyreton. From first distributing race to the second which is to take the water in the direction of Rangiora, the main race

narrowed to 7ft; and to the third and last distributor, which takes a course across the Eyre River to Starvation Hill and Bennetts, the width is 8ft. The race is estimated to supply five million gallons of water per day or 83 cubic feet per second, equal to twice the quantity supplied by Selwyn races, and three times that of the Ashburton system; and the area to be watered is about 136,000 acres.

At the Rock there was an assemblage of about three hundred, a good number of the settlers who expect to benefit from the water supply being present. Amongst the visitors were Mr F. Waymouth, Mr T. Keir (Mayor of Rangiora), Messrs G. Renner, A. Henderson, H. Boyd, D. Dick, O. Hansen, R. Blunden, J. Carmichael, J. L. Wilson, R. Chapman, M. Scott, R. Moore and J. Ingram, and a large number of ladies. Arriving at the Rock the whole party clambered down the face of it to the gates of the intake. Here the Premier, Mrs Seddon, Mrs Bean, and Mr and Mrs Buddo and Mr J. O'Halloran were accommodated over the intake chamber.

The Premier, having turned the screws and raised the gate, said: He had looked forward with great pleasure to the ceremony of opening the water race. Some months ago he had come to see where the Board proposed to take their water from, and, having thirty years experience in the construction of water-races, in hydro-statics and hydraulics generally, he at once gave it as his opinion that the Board selected the proper place. He was pleased to hear that his opinion had been concurred in by the officers of the Mines Department. The aspirations of many in the district had that day been fulfilled. There had been disappointments and difficulties all of which had, however, been surmounted with true Anglo-Saxon fortitude. (Hear, hear,) While the day's ceremony was a pleasing one, there must be a shadow of sadness in the fact of one face being missing. Through good and evil report one who had stuck to the Brown's Rock scheme in opposition to one of a wild nature, and his memory would ever remain green in the district. He referred to the late Mr Marmaduke Dixon. The first scheme propounded was a wild and expensive one, and he felt sure would never have been satisfactory to the settlers if carried out. The present scheme was a practical one, and would he felt sure be beneficial to the district. Under these circumstances he was pleased to have Mr O'Halloran and the members of the Board beside him; and he felt sure the settlers in the district would ever have cause to bless them for their efforts in providing the water supply. As he said before the members of the Board had had their difficulties, about they had been assisted by legislation, and in their finances, and he was pleased that he could now congratulate them upon opening the first section of what he would believe would be a most effective scheme. He had now much pleasure in declaring the race open, and he wished all concerned the highest benefits and all the advantages that must arise from the races now completed. The Premier then called for three cheers for the Chairman and members of the Board, the Engineer and the working men who, under extraordinary difficulties and in the face of a shortage of money, had done the work so well. Three cheers were heartily given and the company adjourned to a marquee for luncheon provided by W. Paget, of the Commercial Hotel, Oxford.

After the luncheon, Mr O'Halloran who occupied the chair, read apologies from the Hons. E. Richardson, W. C. Walker, A. J. Cadman and John McKenzie, Messrs J. Joyce, G. Harris, R. Meredith, M. Macfarlane, W. Buss, G. W. Russell, A. Parsons, H. W. Bishop, E. Feldwick, H. F. Reece, G. A. White, and the Rev. Father O'Connor, all of whom expressed hearty congratulations at the completion of the first section of the water supply works. The Chairman then thanked the visitors for their presence, and proposed the toasts of "The Queen" and "The Governor." He next proposed the health of "The Visitors," coupled with the names of the Premier. The toast was drunk enthusiastically, with musical honours and cheers for the Premier and Mrs Seddon.

The Hon. R. J. Seddon, in responding, assured the company of the great pleasure it gave him to be present, and he was sure that all the guests were delighted with the hospitality shown them. It was not thought a few months ago that they would be meeting on the banks of the Waimakariri under such happy circumstances. The gathering of settlers proved that the Board is in close touch with the people, and it was pleasing to see the prosperity which existed in the district – prosperity which would be enhanced by the good work so commenced. He was pleased to see an old friend from the West Coast, and friends from other parts, and he was sure the opening ceremony would be long remembered as a most happy gathering.

The Premier then proposed the health of the Water-Supply Board, coupled with the name of the chairman, Mr O'Halloran. He reviewed the work undertaken by the Board, and the difficulties it had surmounted. He referred the great services rendered by the late Mr Marmaduke Dixon.

Speaking from experience, he felt satisfied that the work carried out could not in any respect be improved upon. He referred with regret to the fact that some of the working men who did the work did not receive their wages, the contractor having received the money and not paid his men. At considerable length he detailed the steps taken to procure legislation to assist the Board and to the financial support given by the Government to the Board. He urged the settlers to extend and complete the system, and assured them that if this was done in a proper manner the Government would not be behindhand with assistance. He concluded by speaking in hearty appreciation of the Board's services and asking the company to heartily drink its health.

The toast was drunk with hearty enthusiasm.

Mr J. O'Halloran responded at considerable length, entering into a history of the Board and the work carried out. He strongly urged a claim upon the Government for consideration, seeing that about £3,000 was wasted through defective legislation. The Government had voted £1,500, £300 or which had been expended on Cooper's Creek water-races to complete them. It was intended to spend another £250 to extend this supply, and they now had £2,000 in hand, together with £950 expected from the Government, to carry out the subsidiary races across the country. He could see no reason why the Water-Supply Board should not be placed in a similar position to other local bodies with regards to subsidies and reserves. Either abolish reserves and subsidies or treat all local bodies alike. He also urged a claim in respect to the thirds, the proceeds from the sales of Crown lands in the country. He returned hearty thanks on behalf of the Board for the way in which the toast had been received.

Mr D. Buddo proposed the toast of "The Agricultural and Pastor Interests. He referred to the improved outlook for agriculturists. Wheat, he believed, would open at 3s. 9d. or 4s. per bushel, and in North Otago and Canterbury there was an increase of 285,000 acres under wheat as compared with last year. He considered that it would be an advantage to have a county formed out of the country between the Waimakariri and Ashley. He coupled the toast with the names of Messrs F. Waymouth, R. Blunden and J. Ingram, who responded.

Mr G. Johnson Webster proposed the toast "The Contractors," and spoke in high terms of the way in which the work was carried out. The toast was coupled with the names of Messrs Gundry, Askew, Scanlan and J. Thomas.

Mr Thomas, in responding, stated that he, in conjunction with a partner, had built 15,222ft. of bridging; and contracting on his own account, he had constructed 19,737ft, twelve bridges being over 1,000ft. in length. He had always managed to pay his men's wages, and he wished to emphatically deny that a man had been discharged from the tunnel because he had agitated the interests of the working men who had not been paid their wages. He also referred to some legislative matters which, he said, were detrimental to honest contractors.

Mr Webster responded, and mentioned that he expected to have a water-race to Rangiora in four month's time.

The toast of the Press was duly honoured, and the proceedings closed with the singing of "Auld Lang Syne."

Main Race with the Torlesse Range in the background. This photo is taken looking west up the race towards the Waimakariri River. December 1998

Compaction of the wide buttress near the top of the terrace. Note the existing stock water race at right. January 1999

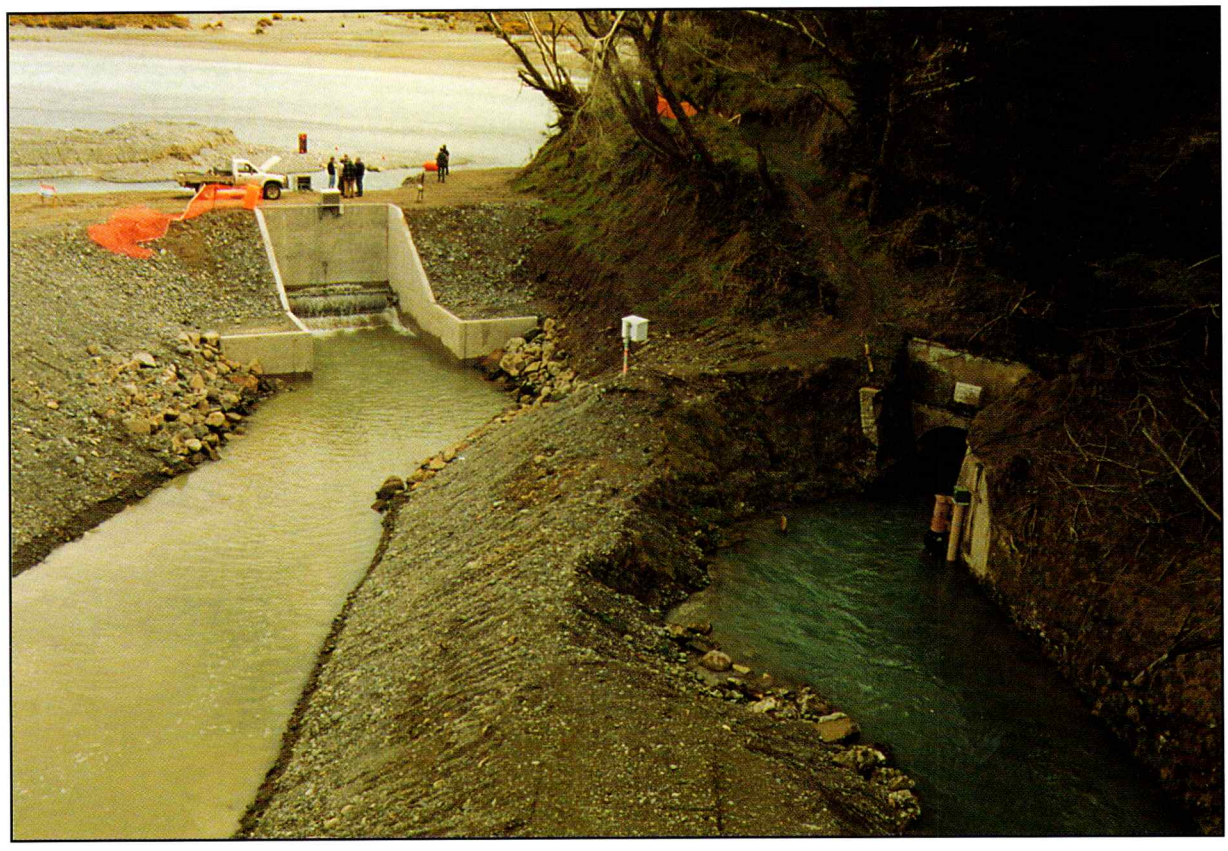
New bridge on the main race. January 1999

Forming the new buttress along the terrace. Note how the use of long metal pipes allowed construction to be carried out beside and over the fully operational existing water race. February 1999

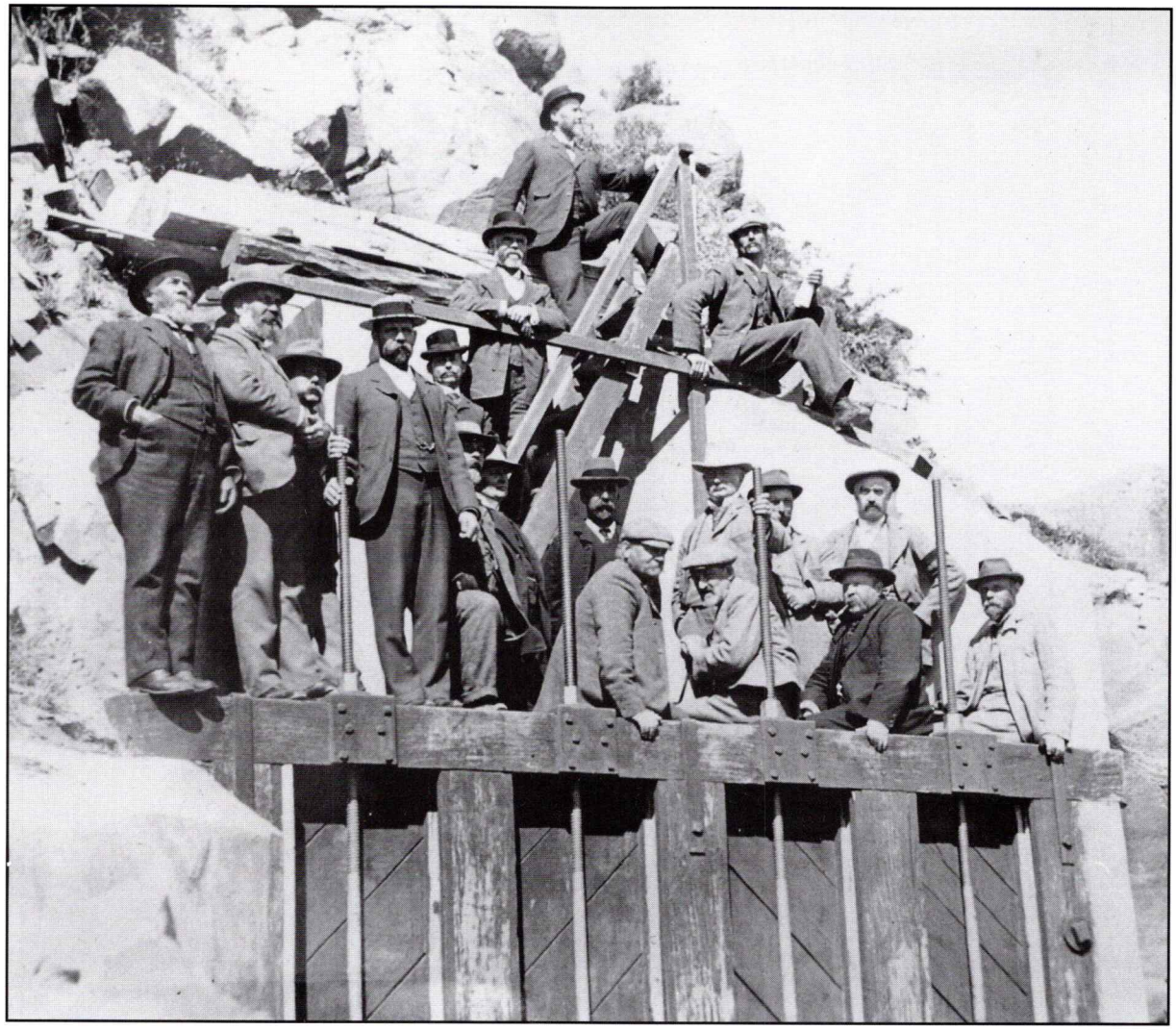
Existing water race and access track. Note that the swamp at the toe of the slope has been excavated down to river gravels in order to give a good bedding for the buttress material. February 1999

The remains of an old control gate near the intake. March 1999

The "Boat" (intake and fish screen combined) during commissioning. August 1999



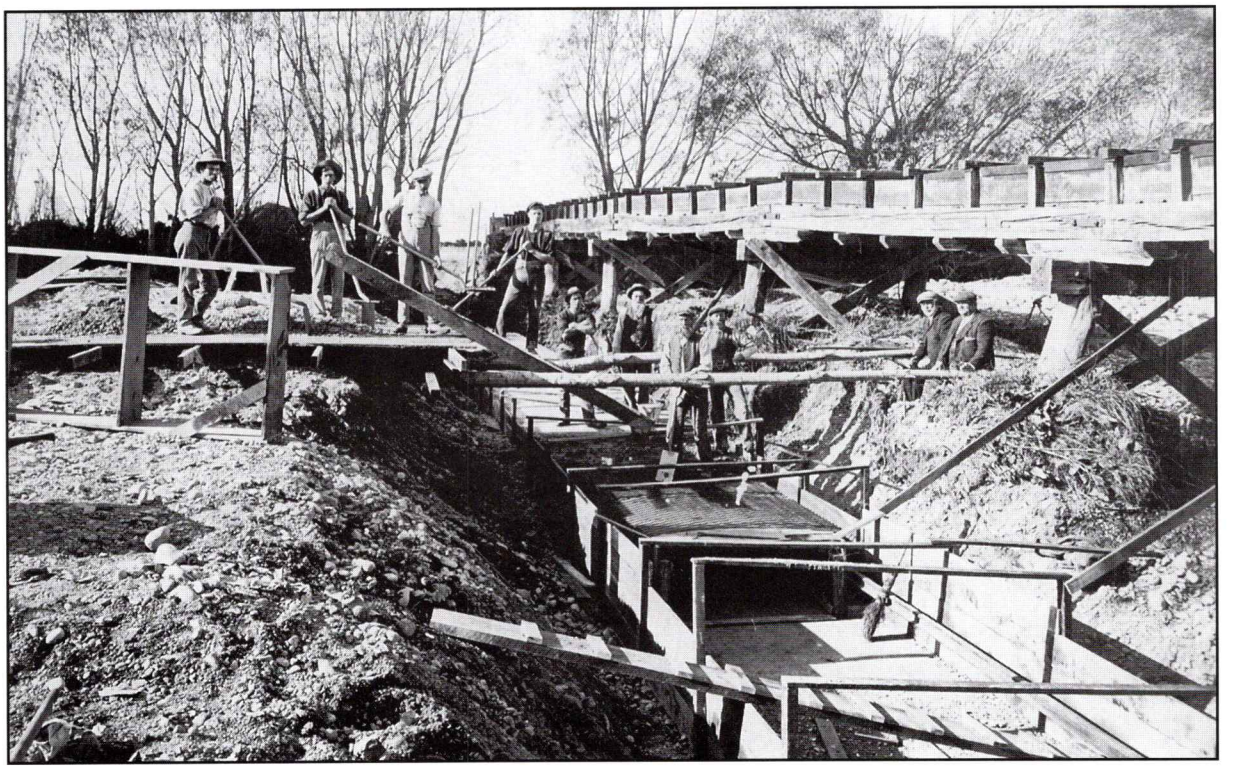
The new intake and the old tunnel (note the commemorative plaque). This tunnel is now registered as an "Historic Place". August 1999



Opening day at Brown's Rock. Richard Seddon stands 2nd from left. The Chairman, O'Halloran, stands far left. 16th November, 1896.

It is interesting that John O'Halloran farmed at Glentui on the North side of the Ashley River. His interest in the scheme may have been based on the benefits that Waimakariri River water could bring to the Ashley area, as originally planned for todays irrigation scheme.

A view of the water race from Brown's Rock, looking downstream. The race can be seen making its way along the side of the terrace in the far distance. 21st November 1923.



Construction of the syphon under the Eyre River at Wolffs Road. The builders were George Smith and Son of Oxford. May 1913.

This photo was taken 17 years after the opening and shows the replacement of the wooden over-race by a syphon under the Eyre River.

The positioning of the race and todays Irrigation Scheme at Browns Rock is without doubt due to Dixon. It may, in part, have been for personal reasons as he was concerned that the silt from the Rockford scheme would have settled in the races long before it reached his property. He placed a large emphasis on this silt which allowed his lighter, stonier land to build up more of a top soil. Interestingly, this feature of the Waimakariri River water is seen today as a liability because of race silting and stock health issues (silting of pasture).

A field day in 1998 at Claxby, farmed by Dixon's descendants (93 year old Marmaduke Spencer Bower and family), covered their modern border dyked scheme using Waimakariri River water.

At the same field day their neighbour, Peter Prattley, advised that although he had not been applying lime in recent years, the pH of his soil had been rising indicating that the river water had both a liming effect and had built up the silt content of the soil.This finding would appear to be backed up by North Canterbury Catchment Board measurements of Waimakariri River water; pH 7.0 to 7.6 at the Gorge Bridge and 7.0 to 8.6 at the Halkett Groyne (between 1974 and 1984).

In the early days the choice of Browns Rock was most strongly criticized because of questions concerning the reliabilty of supply. However, over the last 100 years, in spite of the Waimakariri being a braided and meandering river, it has proved to be very reliable source of stock water. The fact that todays scheme follows the existing water race will be frustrating for the many more westerly farmers of the Burnt Hill area who remain outside the irrigation area.

Prior to 1896, houses were mainly built close to streams. Away from the rivers only wethers, which could go without water for several days, could be run.The farmers at the Claxby Field Day at Christmas in 1891, could have been forgiven for thinking that they would be able to irrigate from this great new water scheme. The reality was that it was used for stock and domestic purposes (when the wells dried up) and for fire fighting. The first real initiatives for serious irrigation began 100 years later.

The Waimakariri-Ashley Water Board office was set up at Cust and is today in its original condition, safely housing hundreds of race maps, photographs and letters. Letters and correspondence indicate that there were many petitions and problems for the Board to deal with. Their ability to plan, build and manage the scheme with the horse as their main form of transport must humble all concerned today. Todays computer controlled race gates, adjusting automatically to river levels, and automatic shut-downs, will be of great benefit to all race users.

Many people have maintained and managed the water races over the past 100 years and made it possible to envisage today's irrigation scheme. Before World War II it required up to 30 men annually to clean the race. After the war labour was scarce and machinery was used for the first time. Two people in particular gave extroardinary service. Thomas Lock was Secretary from 1922 to 1964 and Frank Sheat was a Board member for 51 years from 1919 to 1970, the last 35 years as Chairman.

Generally, since 1896, the water race has been very reliable. However, a "blow-out" on the main race in October 1991, was due to it being constructed with no compaction. Continual leakage and the removal of fine material had weakened the race and extensive modernising would now be required to meet much more stringent Resource Consent requirements due in 2001.

The Rivers of the Waimakariri-Ashley Plains

THE WAIMAKARIRI

The Waimakariri River is one of the largest braided rivers in New Zealand. Its flows are controlled by the climate in its upper catchment where strong northwesterly foehn winds frequently bring heavy rain to the upper basin.

The current demand for water abstraction for irrigation and stockwater is low, but growing . The peak abstraction before the additional 5.5 cubic metres per second (cumecs) of the Waimakariri Irrigation Scheme, is 6.6 cumecs, compared to the mean river flow of 120 cumecs.

THE EYRE

The Eyre River flows for about 45kms from west of Oxford to join the Waimakariri River 15kms from the coast. Frequently in summer and for much of its length, its shingle bed is dry. Its bed and banks are covered with gorse and broom. The only fish in the river are in the lower reaches near where it joins the Waimakariri River.

THE CUST

The Cust River runs from the foothills to the west of Oxford, through the Cust valley and into the Cust Main Drain. The drain was built in 1862 to drain the Rangiora Swamp which then extended from Rangiora to the Waimakariri River. When the drain was enlarged in 1868, it accidentally captured the Cust River.

THE ASHLEY

The Ashley River originates in the Puketeraki Range to the west of Lees Valley and is largely fed by southerly rainfall. As snow melts in the spring the flow is high in September and declines to as low as two cumecs in February at Ashley Gorge. It regularly dries up above the Rangiora-Ashley bridge.

The difference between the Ashley, Cust and Eyre rivers, and the Waimakariri River, is their East Coast catchment. While hot Nor-Westers are drying out the Waimakariri Plains, the Waimakariri River is often swollen by heavy westerly rain in its mountainous catchment.

TODAYS SCHEME - EARLIER CONCEPTS

In recent history there have been several other initiatives to set up an irrigation scheme to harvest Waimakariri River water.

In the Mid 1970's, following a severe drought, a group from the Oxford Branch of Federated Farmers met with the Catchment Board and the Oxford District Council, to discuss the potential for irrigation. Barry Erickson, representing Federated Farmers, remembers the conflicting emphasis placed on the Waimakariri River with the majority of users being fisherman and pleasure craft operators as opposed to farmers. Two meetings were held but nothing eventuated.

In 1983, David Inkson and Gavin Inch were instrumental in planning for 12,000 ha to be irrigated from an intake under the Gorge Bridge. This scheme was to cover the land between the Waimakariri and the Eyre Rivers and would have taken in all the land still not watered to the west of today's scheme. Water rights were applied for and Doug Hood Ltd (WILs eventual main race contractor) actually submitted tentative proposals. However, the Government of the time stopped funding irrigation schemes so this project also lapsed. Gavin Inch went on to become a driving force behind today's scheme as a member of the later formed Waimakariri Irrigation Committee.

A common interesting feature of both of these earlier initiatives was that the existing water race system was never considered as part of the concept. In fact, it would have been seen as a liability with the need for many additional culverts and crossings. What appears to be an obvious symbiotic relationship now was only an apparent option following the coming together of the Oxford and Rangiora Councils, and the Catchment Board, under the umbrella of the Waimakariri District Council.

THE TEN YEARS FROM CONCEPT TO COMPLETION

In the summer of 1988-1989 yet another drought struck the Waimakariri-Ashley Plains area. This drought was the first major dry spell since the advent of the Ashley River Management Plan and the North Canterbury Catchment Board's controls. These controls set abstraction limits from rivers and groundwater during dry spells. In the 1988-1989 drought, for the first time, these abstraction rules came into play. Farmers found that they were prohibited from taking water from surface streams such as the Ashley and Cust rivers and from ground wells in some areas, even though water was visibly available for the taking.

For the first time irrigators in the area realised the true impact of competing uses for water. The situation became so critical that the Rangiora District Council contemplated diverting water from the main channels of the water race system into the Cust River to supplement surface water flows.

While this supplementation was limited because of the small size of the stock water races, it sparked the idea of the water race system becoming a solid base for the development of an irrigation scheme.

It was again most noticeable that the dry north-west winds, blowing across the plains for several months, also meant that the Waimakariri River was in almost permanent flood status during the entire time of the drought.

It was estimated by the Ministry of Ariculture and Fisheries at the time that the 1988-89 drought cost Canterbury $50 million in lost production.

THE FIRST MEETINGS TO DISCUSS WATER SHORTAGES

In 1988 the Rangiora and the Oxford County Councils had met during the drought to discuss ideas as to what might be done to ameliorate the seemingly never ending recurrence of dry years. In early 1989, after the drought had broken, the late Mayor of the Rangiora District Council, Trevor Inch, called a public meeting to discuss issues raised by the drought. This meeting roundly endorsed the concept of investigating the potential for the stock water race to be enlarged to provide some irrigation capacity. A committee was elected from the floor to oversee this investigation.

The committee members were Trevor Inch (Chairman), Gavin Inch, Robert (Bob) Spark, Roscoe Taggart, Craig McIntosh, Neil Price, Trevor Minchington, Duncan Lundy and Gareth James (Manager of Services, Waimakariri District Council). Following the death of Trevor Inch in 1995, Roscoe Taggart was elected Chairman of the Committee. Roscoe played a major role in steering this Committee and in the Resourse Consent process leading to Consent approvals, in part, in 1996.

Publicity of the intention to proceed with an investigation resulted in unsolicited responses from various professionals offering services to consider the problem and to prepare a pre-feasibility report. A joint venture known as Combined Canterbury Irrigation Consultants (CCIC) was set up to investigate the feasibility for redeveloping the water race. An interesting feature of the contract was that if the report indicated that the scheme was not feasible, CCIC would not be paid.

The pre-feasibility study was completed in March 1990. It concluded that the concept of developing an irrigation scheme based on the Waimakariri-Ashley Water Race System had merit, was practical, and feasible.

In September 1990, the Irrigation Committee called a public meeting in Cust to discuss the potential of a combined irrigation and stock water scheme, based on the conclusions of the prefeasibility study. Over 250 people attended this meeting of which over 95% agreed to proceed with the next stage, a full feasibility study.

Rankine and Hill Limited and Irricon Irrigation Consultants Ltd, released their full feasibility report in November 1991. It concluded that the potential benefit from an integrated approach which involved both surface and groundwater resources was enormous.

FEASIBILITY REPORT SUMMARY

1 It proposed a scheme which took 5.5 cubic metres per second of water for irrigation, at Browns Rock, to a command area of 40,000 ha adjacent to and east of the main stock water race.

2 A continuing take of the existing 1.5 cubic metres per second of water for the stock water system.

3 It proposed an integrated groundwater and surface water management approach that uses summer water for irrigation and winter water for recharging aquifers used for groundwater supply irrigation

4 An assessment ot the internal rate of return on capital for investment for farmers using traditional farming methods of 19.8% at the farm gate level.

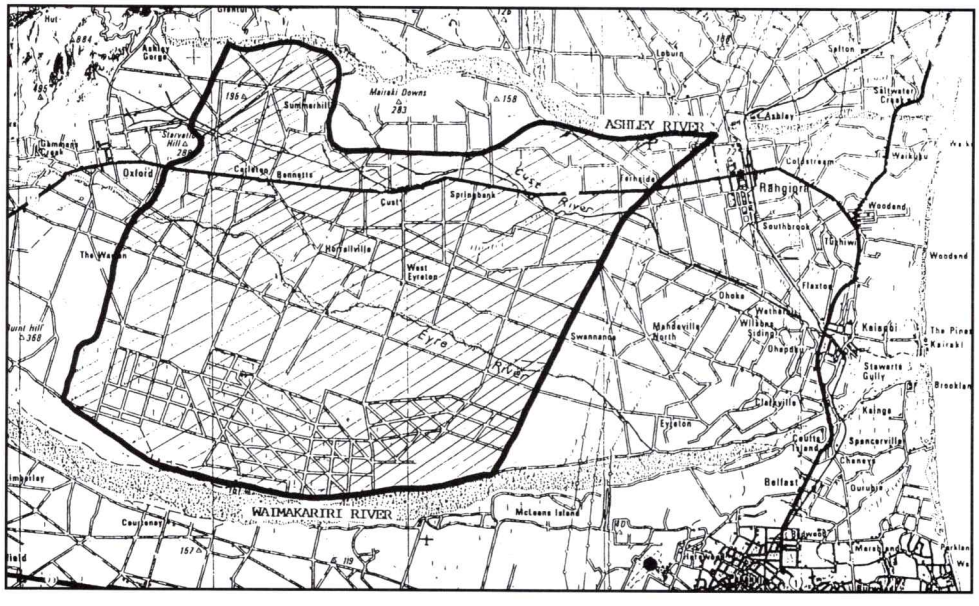
5 An assessment of likely farmer reaction which indicated that about 7,300 ha could be developed for irrigation in the initial phase.

An information pack containing the results of the study was mailed to each property owner.This enabled them to make their own assessment of the potential benefits of the scheme to their property, and also requested that they complete a Statement of Intent. A further public meeting was held at Cust in August 1991, where 200 people were given the results of the feasibility study.

Pattle Delamore Partners Limited were commissioned to carry out a groundwater study which was completed in February 1993. This concluded that supplementation of the Ashley and Cust Rivers and groundwater supplementation through the Eyre gravels, could be a viable and a sensible use of water resources.

It was at this point that the Waimakariri Irrigation Scheme changed its name to the Waimakariri AshleyWater Management Scheme (WAWMS). This new name incorporated the concept of the water resource being used for a variety of outcomes. This can be seen in the following extract from a 1993 WAWMS newsletter.

EXTRACT FROM 1993 NEWSLETTER



Potential Area for Irrigation Distribution Races

ASHLEY AND CUST RIVER SUPPLEMENTATION

The Ashley River has a tendency to dry up in summer. This affects wildlife, recreational users, and river irrigators. By providing water from the Waimakariri when the Ashley is low, it will be possible to keep the Ashley flow above the existing minimum flow most of the time. This will vastly improve the situation for fish and wildlife, and river users. Irrigators using Ashley water will have much greater security, as the likelihood of low flows causing the banning of abstractions will be greatly reduced.

The Cust River also suffers from low flows in dry periods. It will be possible to add water to the Cust to ensure that it continues to flow above the minimum flow level where irrigation from the river has to stop. This will be a major benefit to Cust irrigators, and will also enhance the fish and wildlife environment.

The key concepts of the WAWMS Scheme were-

- supplying surface irrigation for increased on-farm productivity
- augmentation of river flows to maintain in stream values and enhance biological activity
- supplementation of groundwater resources, especially with respect to the Eyre aquifer
- possible use of water channels and wetlands as wild life habitats

During 1993, 1994 and 1995, many meetings were held to discuss the Report's findings with local property owners and with special interest groups.

In May, 1996, the WAWMS Committee applied for Resource Consent variations to add the enhancement of the Ashley and Cust river flows to the irrigation consents.

The Ashley and the Waimakariri rivers are the most heavily used rivers for recreation in Canterbury. Significant advantages for recreation and fishing were foreseen and in the recharging of ground waters. However, the enhancement plans did not get Resource Consent approval mainly because of turbidity differences between the two waters (even after passing through wetlands) and because of the unknown effect Waimakariri water would have on the false-homing of Waimakariri salmon to the Ashley River.

During the 1998 drought there were letters to the Editor of "The Press" concerning the large numbers of fish dying in local rivers. It was suggested that these fish might well have been saved if some environmental groups had not pushed during the Resource Consent process to stop enhancement of these same rivers.

TREVOR INCH A KEY DRIVER BEHIND THE SCHEME

Just as Marmaduke Dixon had provided the energy and political persuasion to build the stock water race system a century earlier, Trevor Inch was the driving force that resulted in the present scheme. Because of the respect others had for him and through his leadership ability to bring others around to his way of thinking, this irrigation concept was taken beyond the "couple of meetings stage" to become a reality.

Like Marmaduke Dixon, Trevor Inch did not survive to see "his" scheme. Some of the words for which he will be remembered were -

"*The future of the Waimakariri Ashley plains area and the Waimakariri community is bound up with the Waimakariri Ashley Water Management Scheme. If the scheme goes ahead the Waimakariri Ashley plains will become the garden of Christchurch. If the scheme does not go ahead, the plains area will become the bedroom of Christchurch*"

Shortly before he died, Trevor made it very clear to his successor as Mayor , Janice Skurr, how important he saw the planned scheme. At the hand over of the above Committee to Waimakariri Irrigation Ltd (on the 20th April 1998), Janice described Trevor's special request to her that the irrigation scheme be completed. Despite much Council debate, Janice Skurr strongly supported his vision and saw his dream fulfilled.

The co-operation of the Council and all the existing water race users provided the vehicle for the irrigation scheme to eventuate. It is for this reason a plaque has been commissioned to record the gratitude of all race users for those race-men, managers and race ratepayers who presented the race system for its transformation over the last twelve months.

WAIMAKARIRI IRRIGATION LIMITED

The Irrigation Committee was set up to get the scheme planning off the ground. Having successfully obtained Resource Consents for irrigation (but turned down on river supplementation to all but the Eyre River) it now needed to raise funding. A company was formed to issue a prospectus, raise the necessary funds and take over from the WAWMS Committee.The company was registered as Waimakariri Irrigation Ltd (WIL); a reversion to the original title because the enhancement of the Ashley and the Cust Rivers was not now an option and the WAWMS concept was no longer appropriate.

Five Directors were selected by Coopers and Lybrand and the Waimakariri District Council following a keen response for the advertised vacancies. They were Donald Young (subsequently to become Chairman), Robert Spark and Roscoe Taggart (both from the WAWMS Committee), Gerald Clemens and Richard Allison. Two Directors were appointed by the Council; Trevor Minchington (the Council Drainage Asset Manager) and Leicester Steven. Leicester retired as a Director in 1999 and was replaced by Gareth James.

Gareth, as the Waimakariri District Council's former Services Manager, was a part of the scheme from the first meeting in Cust and with Roscoe Taggart and Bob Spark, ensured a succession and consistancy in the scheme's direction and management.

All Committee and Board members gave their time on a voluntary basis and this generosity of spirit was matched by the goodwill and co-operation of race users and, subsequently, shareholders.

The Waimakariri District Council showed a similar committment to the scheme by bridging the funding costs of the Resource Consent process to a total $679 000. It later guaranteed the construction loan for five years. This essential seed capital was fully repaid by WIL during the official opening of the scheme on October 30, 1999. In return for this short term loan, the district now has a rebuilt, automated stockwater race system and the irrigators a modern efficient irrigation system. This represents a very good example of the co-operative spirit of a district benefiting those on the land with subsequent beneficial flow-on affects for the rest of the community. These benefits are often under estimated. The Rangitata Diversion Race, the basis for a large irrigated area in mid-Canterbury, was constructed during the 1930's depression: 63 years later the benefits are still growing . In 1996 it was calculated that the additional annual income was $138 million for the Ashburton District ($5738 per head). This economic activity ensured that in 1996 Ashburton had the lowest unemployment rate nationally for a town of its size.

The cost of the scheme was just under $7.3 million. It was funded by Fixed Rate loans amounting to $3.3 million for twelve years and by a Capital input from 250 shareholders of $4.04 million. The timing of the borrowing along with the guarantee was fortunate with large interest savings being achieved compared to those prevailing at the time the Prospectus was issued.

David Attewell (Attewell Irrigation Consultants Ltd) was contracted by the Irrigation Committee during the Consent process and worked well with Resource Consultant Peter Callender from Pattle Delamore Partners. David had a reputation from farmers in the Maniototo and the Opuha Dam scheme area as an irrigation engineer with a practical,

common sense approach. His achievements were in stark contrast to 1980s Government led initiatives where "over design" and cost over-runs were common. Strong references and knowledge of the Waimakariri Ashley water race system led to his successful appointment as Project Manager. He steered the development and brought the $7.3 million scheme to completion on time, under budget and with some quite significant enhancements (automation, oversizing of culverts, website) compared to the prospectus.

There were some unknown aspects of the main race design such as the characteristics of the subsoil along the terrace. Because of this and the need for the intake to be designed to handle the Waimakariri River in full flood, the best possible design was required. Doug Hood Limited were the successful tenderers for the main race contract. They have constructed a revolutionary fish screen and intake " boat" all in one which is thought to be unique in this type of environment. After ten years of planning, construction began on Malbon Farm in October 1998. The official opening ceremony was held on the 30th October 1999 at the intake near Browns Rock.

The biggest challenge for Doug Hood Ltd involved about seven kilometres of construction from the intake to the top of the terrace.

The existing race along this portion was in very poor condition and a large buttress to carry the new canal had to be built outside it. In addition, it was believed that a significant earthquake risk existed and a suitably engineered and built embankment was required.

Philip Reid, the Race Foreman since 1977, worked hard to keep stock water flowing during construction. He has become the focus of local knowledge and a familiar contact for race users . Bill Allison, in earlier planning, and more recently Bill Stevenson have, as scheme consultants, liased with land owners, reporting back to the Project Manager, David Attewell.

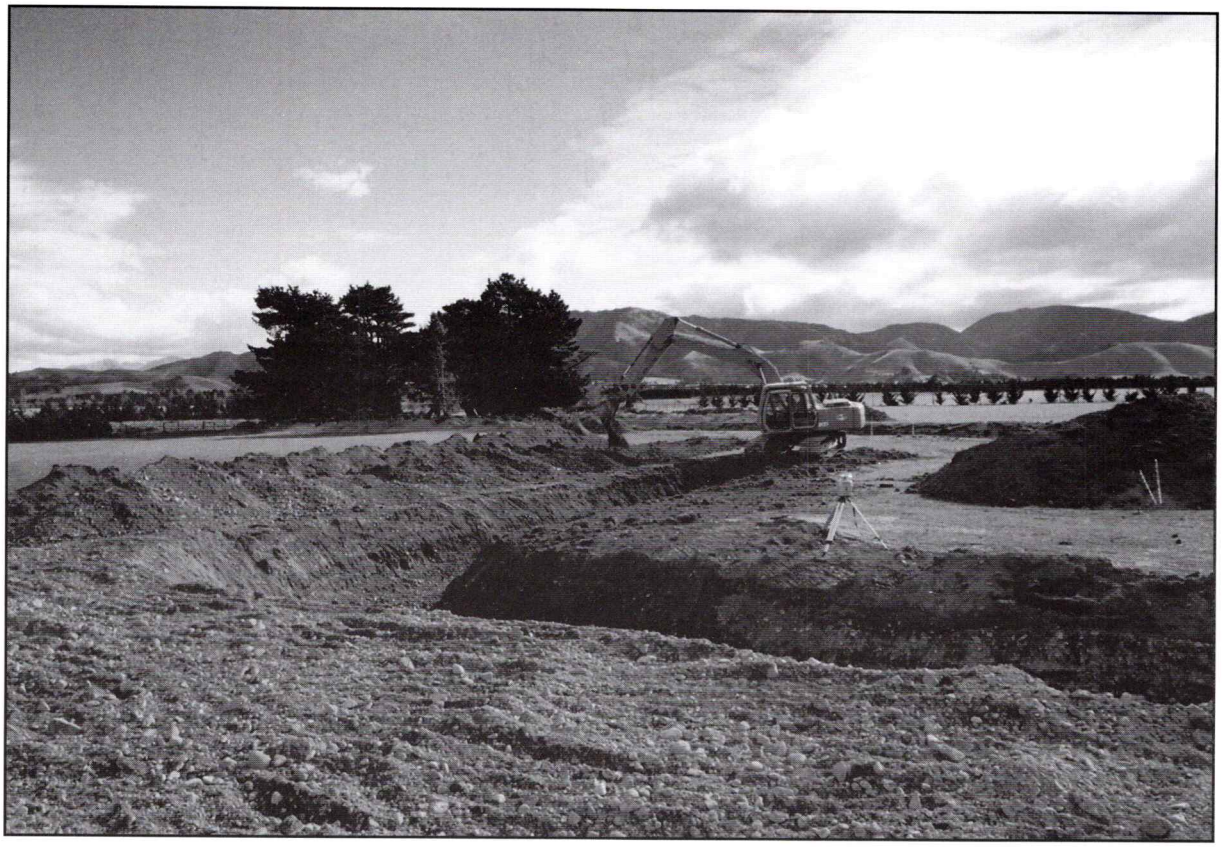
Trevor Minchington managed the stock water race system as the Waimakariri District Council's Drainage Asset Manager and frequently had to deal with higher than acceptable leakages during construction, to the extent that during the drought of 1998, some stock water race users did not receive water.

Brian Lester, Manager of Finance, Waimakariri District Council has provided strong support ensuring that the Board and the Council has worked as a team. Shirley Farrell has recorded all the Minutes and administered all correspondence during the company's formative years..

Don Young (Chairman) and the rest of the Board all played an active role in bringing a concept envisaged by so many over more than 100 years to fruition. It was a tremendously challenging but rewarding experience, in all their opinions.

As this publication goes to print in the hope that it will be available for the opening ceremony, on October 30, 1999, many farms are already being irrigated. Everywhere, there is intense activity and plans for the water this summer, 104 years after it first began to flow through the tunnel at Browns Rock.

Truly, a vision fulfilled.



Realignment of Main Race.

The silt ponds are designed so that water continues to flow on one side when the other is closed off for cleaning. August 1999

Through the culvert.

My Thanks to	Bernard Kingsbury Gavin Inch	Cust Museum Oxford Museum
Writer	Richard Allison www.wil.co.nz	

Doug Hood